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"Alpha Antenna uses antenna designs that are known to work!"

User Guide for the Alpha Portable Loop Antenna

Manufactured by:
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1.888.482.3249

Website: http://AlphaAntenna.com

Available from:
Amateur Radio Store

Website: https://amateurradiostore.com

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Introduction

Thank you for purchasing the Alpha Micro-Tune Loop Antenna. We hope that you will enjoy using this product, as we continue to receive written testimonials from Amateur Radio Operators (Hams) who are surprised by the antenna's ability to make many long distance contacts, using low power.

The Alpha Loop is a magnetic loop antenna that is easy to tune, has acceptable bandwidths, and offers coverage for 40, 30, 20, 17, 15, 12, & 10 meter bands. The antenna is only 34 inches in diameter and has a built in tuner at the base of the antenna. This antenna is so efficient that it can be used indoors, from a porch or balcony with only a 2-3db reduction in performance.

Finally, if you require assistance assembling or using this product, please do not hesitate to call us at 1-888-482-3249 or send email to: support@alphaantenna.com

Product Overview

The Alpha Micro-Tune Loop Antenna is designed to operate on the 10, 12, 15, 17, 20, 30, and 40 Meter amateur radio bands. It will accept up to 30 Watts (PEP) of transmitter power on SSB. Using the antenna's Micro-Tuner, your radio's transmission line SWR can be continuously tuned to a match of less than 1.5:1 on any frequency from the 10 Meter through the 40 Meter band.

When manufacturing this antenna, we use only brass bolts and nuts at the connection points that feed the antenna, as well as silver plated shield and gold plated pin connectors at the feed point of the antenna. We then place the Alpha Match inside a High Voltage UL-Rated housing.

We put safety first and insert a nylon shaft between the knob on the front of the Alpha Match and the 6:1 reduction drive that connects to the Variable Air Capacitor, which is designed to keep RF burns from occurring. This design also helps to minimize your body's capacitive interference when tuning the Alpha Loop.

Additional Product Details

- Antenna Weight: 1.5 pounds
- Tripod Weight: 3 pounds
- Bag Weight: .25 pounds
- Antenna Configuration: Circular Loop
- Frequency Coverage: 7 MHz to 29.7 MHz
- Maximum Power Rating: 30 Watts PEP SSB
- Height to top of Alpha Loop (if mounted on tripod):
    - Minimum; Approximately 6 Feet
    - Maximum; Approximately 9 ½ Feet

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Safety Tips

When installing or operating this antenna or any other antenna/tower, please observe the following safety tips.

NOTE – High voltages are present when transmitting, no matter how much or little power is applied. Do not touch any part of the Alpha Loop while transmitting.

WARNING: INSTALLATION OR OPERATION OF THIS PRODUCT NEAR POWER LINES IS DANGEROUS! FOR YOUR SAFETY, FOLLOW THE ENCLOSED INSTALLATION DIRECTIONS. THOUGH THIS ANTENNA IS CONSTRUCTED OF INSULATED WIRE, PROPER CARE MUST BE TAKEN DURING INSTALLATION. INSTALLER ASSUMES ALL LIABILITY FOR PROPERTY AND LIFE SAFETY.

YOU, YOUR ANTENNA, AND SAFETY

Each year, hundreds of people are killed, mutilated, or receive severe and permanent injuries when attempting to install an antenna. In many of these cases, the victim was aware of the danger of electrocution, but did not take adequate steps to avoid the hazard. For your safety, and to help you achieve a good installation, please **READ** and **FOLLOW** the safety precautions below. **THEY MAY SAVE YOUR LIFE!**

1. If you are installing an antenna for the first time, please, for your own safety as well as others, seek PROFESSIONAL ASSISTANCE.
2. Select your installation site with safety, as well as performance, in mind. **REMEMBER:** ELECTRIC POWER LINES AND PHONE LINES LOOK ALIKE. FOR YOUR SAFETY, ASSUME THAT ANY OVERHEAD LINES CAN KILL YOU.
3. Call your electric power company. Tell them your plans and ask them to come take a look at your proposed installation. This is a small inconvenience, considering **YOUR LIFE IS AT STAKE.**
4. Plan your installation procedure carefully and completely *before* you begin. Successful raising of a mast or tower is largely a matter of coordination. Each person should be assigned a specific task, and should know what to do and when to do it. One person should be designated as the leader/coordinator of the operation to call out instructions and watch for signs of trouble.
5. When installing your antenna, **REMEMBER: DO NOT USE A METAL LADDER. DO NOT WORK ON A WET OR WINDY DAY. DO DRESS PROPERLY:** shoes with rubber soles and heels, rubber gloves, long sleeved shirt or jacket.
6. If the assembly starts to drop, get away from it and let it fall. Remember, the antenna, mast, cable and metal guy wires are all excellent conductors of electrical current. Even the slightest touch of any of these parts to a power line completes an electrical path through the antenna and the installer – **THAT'S YOU!**
7. If ANY PART of the antenna system should come in contact with a power line, **DON'T TOUCH IT OR TRY TO REMOVE IT YOURSELF. CALL YOUR LOCAL POWER COMPANY.** They will remove it safely. If an accident should occur with the power lines, call for qualified emergency help **IMMEDIATELY.**

Antenna Diagram

The major components of the antenna, and their relative positions, are depicted in Figure 1.

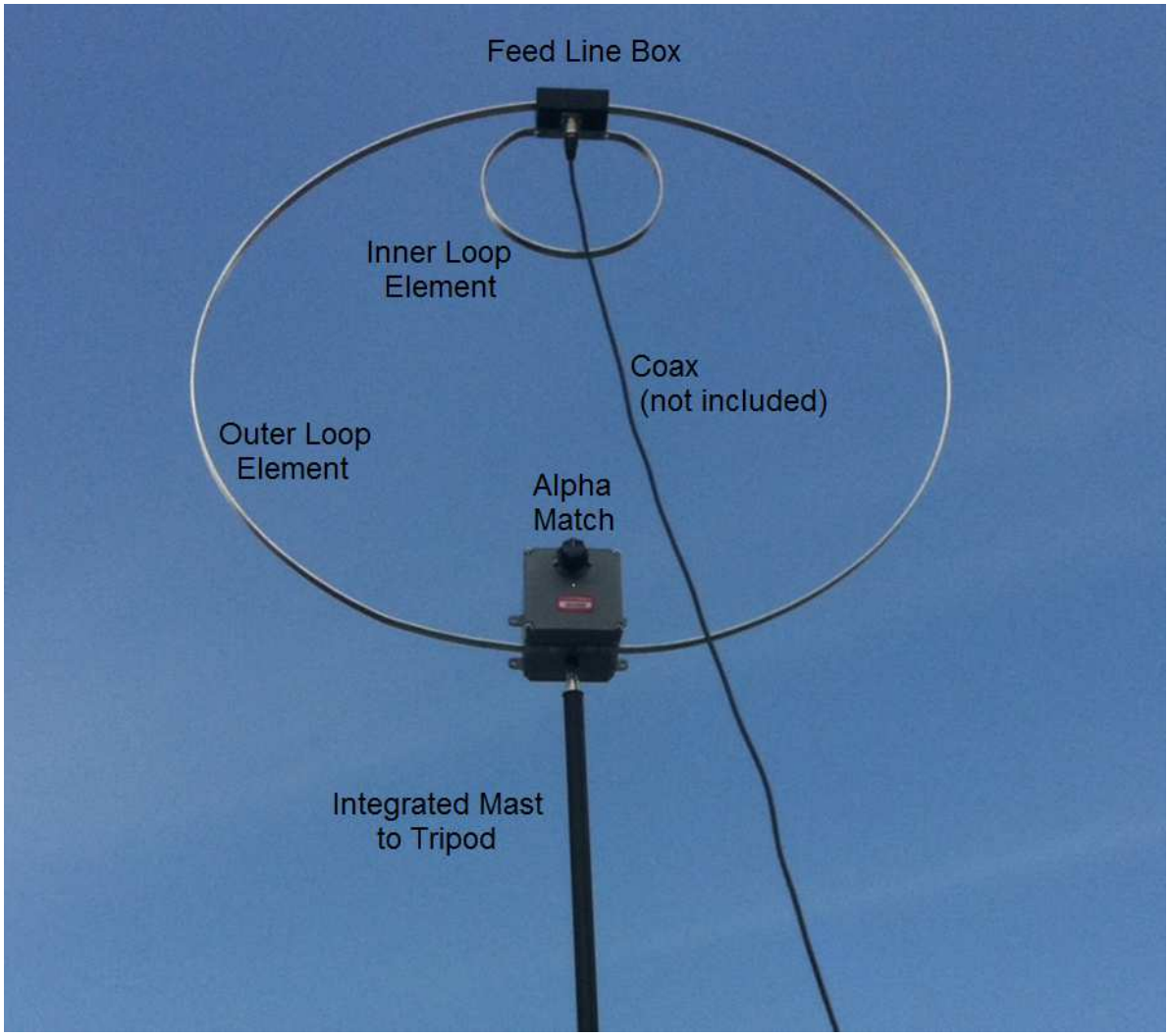

Figure 1

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Antenna Parts List

The following parts are included with this antenna. Please contact our support line if you discover that parts are missing or damaged.

Item	Description	Qty.	Comment
1	Black Canvas Carry Bag with Shoulder Strap	1	
2	Tripod with integrate Mast	1	
3	Black Feed Line Box with SO-239 Connector	1	
4	Grey Alpha Match Box	1	
5	Circular Aluminum “Inner Loop” Antenna Element – Small	1	Used for 10-12 Meters
6	Circular Aluminum “Inner Loop” Antenna Element – Large	1	Used for 15-40 Meters
7	Curved Aluminum “Outer Loop” Antenna Elements – Long	4	1 from each side removed for 10-12 Meters
8	Curved Aluminum “Outer Loop” Antenna Elements – Short	2	
9	Screws – Stainless Steel 1 x 6/32	Min. 20	Additional are included
10	Wing Nuts – Stainless Steel 6/32	Min. 20	Additional are included

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Antenna Assembly Instructions

Please follow the steps listed below to assure proper operation of this antenna and deploy as depicted in Figure 2.

Figure 2

Step	Assembly Operation
1	Remove all items from the Canvas Carry Bag and carefully cut open the reusable 6 Mil plastic bag some of the components are in and inspect each item for any damage.
2	Identify and count all parts, comparing them to the Parts List.
3	Set the tripod aside, for the moment.
4	Determine your initial operating requirements: • If you plan to configure and operate the antenna on 15-40 Meters, go to Step 5 • If you plan to operate and configure it for 10-12 Meters, go to Step 8.

Step	Assembly Operation
5	To configure the antenna for operation on 15-40 Meters, attach each end of the **Large "Inner Loop" Antenna** to the two terminal straps located on the Black Feed Line Box using four screws and nuts as depicted in Figure 4 below. Set this assembled piece to the side, for the moment.
6	Now, assemble the **Outer Loop Antenna** as depicted in Figure 4 below for 15-40 Meters by first building two separate outer loop "semi-circles" consisting of: • One long/curved outer loop element, fastened to one short/curved outer loop element, fastened to one long/curved element. • Use four screws and four nuts to (loosely) fasten the three antenna elements together. • Repeat this process to assemble the second semi-circle.
7	This completes the partial assembly of the antenna for operation on 15-40 Meters. Go to Step 12.
8	To configure the antenna for operation on 10-12 Meters, attach each end of the **Small "Inner Loop" Antenna** as depicted in Figure 3 below to the two terminal straps located on the Black Feed Line Box using four screws and nuts. Set this assembled piece to the side, for the moment.
9	Now, assemble the **Outer Loop Antenna** for 10-12 Meters as depicted in Figure 3 below by building two separate outer loop "semi-circles" consisting of: • One long/curved outer loop element, fastened to one short/curved outer loop element. • Use two screws and two nuts to (loosely) fasten the two antenna elements together. • Repeat this process to assemble the second semi-circle.
10	This completes the partial assembly of the antenna for operation on 10-12 Meters. Go to Step 12.
11	Continue the final assembly steps for either the 15-40 Meter or 10-12 Meter antenna by attaching the **Black Feed Line Box** to the top of the two antenna semi-circles and by attaching the **Grey Alpha Match Box** to the bottom of the two antenna semi-circles as follows: • Lay the two semi-circle antenna elements on a flat surface. Form them in the shape of a circle but do not connect the top or bottom ends of the semicircles together. • Locate the Black Feed Line Box and place it at the top and inside of the newly formed antenna "circle", with the box's SO-239 connector facing downward (towards the center of the antenna circle). Connect one terminal strap of the Black Feed Line Box to the top left element of the semi-circle. Connect the other terminal strap of the Black Feed Line Box to the top right element of the semi-circle. Use four screws and nuts to fasten. • Locate the Grey Alpha Match Box and place it at the bottom and inside of the

Step	Assembly Operation
	antenna "circle", with the box's tripod receptacle facing downward. Connect one terminal strap of the Alpha Match Box to the bottom left element of the semi-circle. Connect the other terminal strap of the Alpha Match Box to the bottom right element of the semi-circle. Use four screws and nuts to fasten.
12	Tighten all screws and nuts securely so that the assembled antenna does not come apart during operation.
13	Locate the tripod, extend the tripod sections, and then screw the base of the antenna's Alpha Match box to the tripod. Position the antenna in a location where it cannot touch other objects such as lamps, desks, poles, wires, power lines, ladders, people, etc.).
14	Connect a PL-259 connector with 50 Ohm coax transmission line to the Black Feed Line Box as depicted in Figure 1 above and test the antenna before operating on the air.

Figure 3 (10-12 Meter Setup)

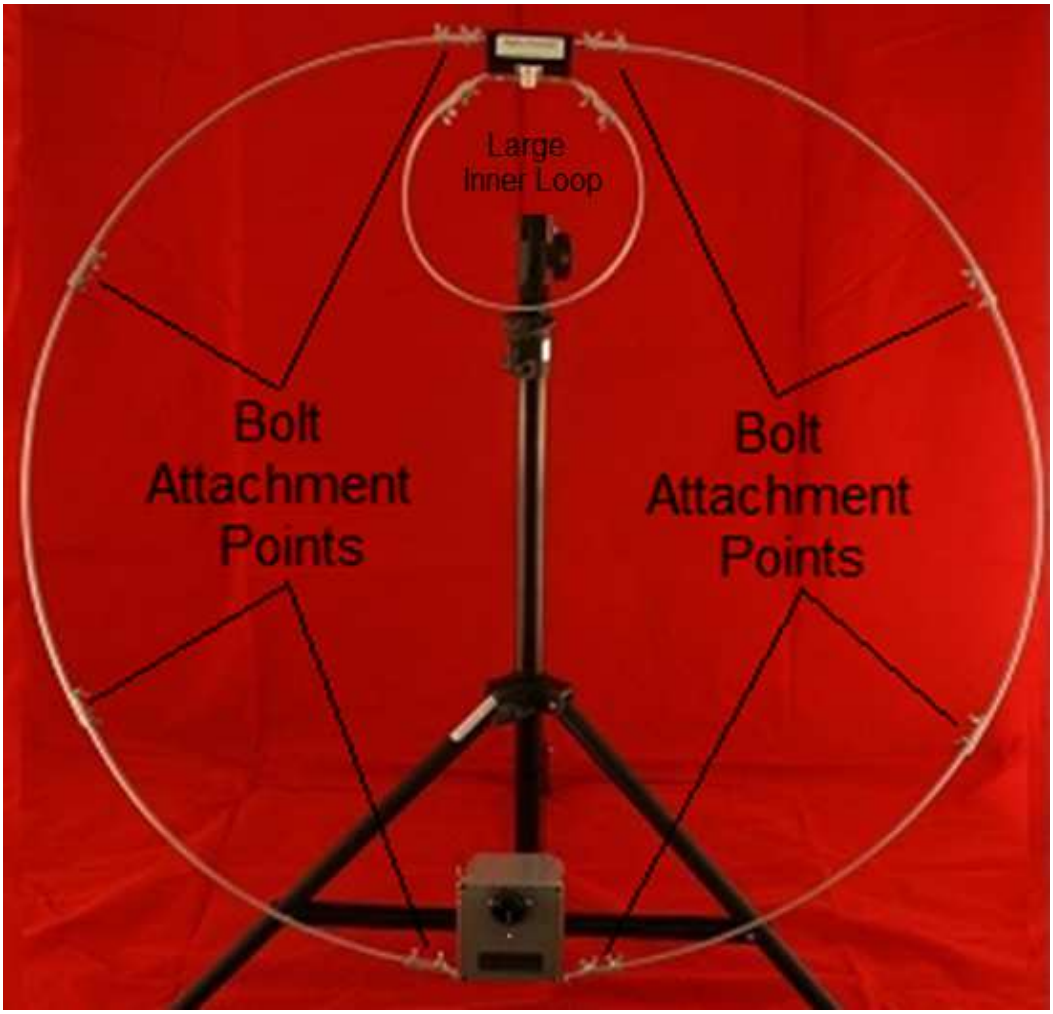

Figure 4 (15-40 Meter setup)

Antenna Operation

The Alpha Loop antenna has a built in tuning knob, which is black, on the Alpha Match, as depicted Figure 1 above, and other images as well. It is with this knob that you tune the antenna to the lowest SWR of less than 1.9:1 on any frequency from the 10 Meter through the 40 Meter band. The following technique has proven to be the easiest method for tuning the Alpha Loop in nearly all scenarios:

1) After attaching your coax (per Step 14 above), turn your radio on and to the frequency you would like to operate, then adjust the volume so you can hear it while standing at the antenna.
2) Turn the black knob on the Alpha Match till you hear the loudest noise level coming from the speaker on the antenna.

3) Return to the radio and adjust the power to a level of 5 watts or less and set your rig into AM mode and a maximum of 5 watts out, then set you rig into transmit mode.
4) Return to the antenna and fine tune the Alpha Match with the black knob till the built in SWR Indicator bulb is most brightly lit.
5) Your SWR, as indicated on your rig, should now be at 3:1 or less.

OPTIONAL FINE TUNING

6) Optional fine tuning:
    a. Continue to transmit in AM mode with your transmitter at 5 watts and while watching the SWR meter on your rig either;
        i. Move your tuning dial (within the frequency range you are licensed to operate on, till minimum SWR is attained), or
        ii. Slightly move the black knob on the Alpha Match till the minimum (1.5:1 or less) is shown on your rig. This step can also be used if an antenna analyzer is connected rather than a transceiver.

As is mentioned in step 6.a.ii., you can use an antenna analyzer that is set to the frequency you are going to transmit on and turn the knob on the Alpha Loop till your SWR dips. When using the antenna analyzer, many have found that an A/B Switch with the rig on A and the analyzer on B makes it quick and easy to switch from analysis to transmit.

For future reference, and as you learn where the arrow and tic mark on the Alpha Match knob is pointing, please feel free to make a note for where the pointer and tic mark are located on the front label behind where the black knob is pointing. This will allow an alternate tuning method for you to find where the arrow and also the knob tic mark should be pointed for each band when you need to retune your antenna.

HINT – When you remove your hand after tuning for minimum SWR (for example 1.4:1), then when you remove your hand the SWR goes to 2.6:1 (for example). Simply tune for 2.6:1 (for example) when your hand is touching the black knob on the Alpha Match, and then when you remove your hand the SWR should go to 1.4:1 (for example).

NOTE – High voltages are present when transmitting, no matter how much or little power is applied. Do not touch any part of the Alpha Loop except the black knob while transmitting.

Support Contacts

If you have questions about your antenna, please feel free to contact us.

Email: support@alphaantenna.com
Phone: 1-888-482-3249
WEB: www.alphaantenna.com